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Gender Preferences, Socio-Demographic and Health Risks Associated with Preferred Preventive-Promotive Benefit Packages of Health Insurance for Women in Perak and Selangor, Malaysia

(Keutamaan Jantina, Sosio-Demografi dan Risiko Kesihatan yang Berkaitan dengan Pakej Manfaat Pencegahan-Promotif Pilihan untuk Insurans Kesihatan bagi Wanita di Perak dan Selangor, Malaysia)

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ABSTRACT

Given the escalating cost of healthcare, Malaysia has to consider implementing social health insurance to provide better financial health protection to the population, especially women. Women are vulnerable to financial distress because they need more complex healthcare needs than men. Therefore, this study will examine the perception among the Malaysian population towards preferred preventive/promotive benefit packages of health insurance for women by analyzing preferences among men and on women's health services. This study determined respondents' preferences towards preventive/promotive benefit packages for women using a cross-sectional study conducted in two states; Perak and Selangor from December 2016 to December 2017. This study looked at gender preferences and socio-demographic variables, health risks, and subscription to health insurance to preventive/promotive benefit packages preferences for women. A total of 638 respondents in the 18- to 60-year-old age group were drawn from both genders in this study. Analyzes used logistic regression to determine predictors of preventive/promotive benefit packages preferences for women. The results from the analysis showed that more women (66.7%) significantly preferred preventive/promotive services compared to 58.7% of males ($p < 0.05$). In the multivariate analysis among women, Malay ethnicity (OR 2.42, 95% CI 1.37-4.24), self-employed (OR 6.24, 95% CI 2.41-16.10) and not-working/pensioner (compared to the civil servant; OR 2.71, 95% CI 1.35-5.40), obese (OR 16.24, 95% CI 4.50-58.62), no chronic illness (OR 3.72, 95% CI 2.01-6.88), and subscribed to health insurance (OR 4.21, 95% CI 1.33-5.52) were the factors associated with women's preferences towards preventive/promotive benefit packages. Meanwhile, for men, age less than 40-year-old (OR 3.56, 95% CI 1.82-6.95), higher education (OR 3.40, 95% CI 1.77-6.52), self-employed (OR 4.65, 95% CI 2.01-10.72), ex-smoker (OR 5.17, 95% CI 1.42-18.75), heavy physical activity (OR 1.26, 95% CI 1.13-1.52), pre-obese (OR 5.35, 95% CI 2.03-14.05) and obese (compared to underweight; OR 2.28 95% CI 1.18-4.36), and subscribed to health insurance (OR 2.72, 95% CI 1.33-5.52), were associated with men's preferences towards preventive/promotive benefit packages. The overall results of this study show the importance of socio-demographic factors, health risks, and subscription of health insurance among men and women towards the preferences for women's benefits packages of health insurance.

Keywords: Health insurance; health services; preventive services; women's health services

ABSTRAK

Malaysia perlu mempertimbangkan untuk melaksanakan insurans kesihatan sosial dalam menyediakan perlindungan kesihatan yang lebih baik kepada penduduk terutama wanita, disebabkan peningkatan kos penjagaan kesihatan. Wanita merupakan golongan yang seringkali mengalami kesulitan kewangan kerana penjagaan kesihatan wanita adalah lebih kompleks berbanding lelaki. Justeru, kajian ini adalah untuk mengkaji pandangan kalangan penduduk Malaysia terhadap kecenderungan pakej pencegahan/promosi dalam insurans kesihatan wanita dengan mengkaji kecenderungan jantina memilih pakej untuk wanita. Menggunakan kajian keratan rentas yang dijalankan di dua negeri; Perak dan Selangor; kajian ini dijalankan untuk mengetahui kecenderungan jantina dan faktor sosio-demografi, risiko kesihatan dan pemilihan insurans kesihatan terhadap pakej manfaat bagi wanita. Seramai 638 responden dalam lingkungan umur antara 18 hingga 60 tahun, lelaki dan wanita, terlibat dalam kajian ini. Analisis dijalankan menggunakan regresi logistik untuk mendapatkan peramalan bagi pakej pencegahan/promosi untuk wanita. Hasil kajian menunjukkan 66.7% wanita lebih cenderung memilih pakej pencegahan/promosi berbanding 58.7% lelaki ($p < 0.05$). Dalam analisis multivariat dalam kalangan wanita, bangsa Melayu (OR 2.42, 95% CI 1.37-4.24), bekerja sendiri (OR 6.24, 95% CI 2.41-16.10) dan tidak bekerja/pesara (OR 2.71, 95% CI 1.35-5.40) (berbanding pekerja kerajaan), obes (OR 16.24, 95% CI 4.50-58.62), tiada penyakit kronik (OR 3.72, 95% CI 2.01-6.88) dan memiliki insurans kesihatan (OR 4.21, 95% CI 1.33-5.52) adalah faktor yang mempengaruhi kecenderungan wanita memilih pakej pencegahan/promosi. Bagi lelaki pula, umur

kurang 40 tahun (OR 3.56, 95% CI 1.82-6.95), berpendidikan tinggi (OR 3.40, 95% CI 1.77-6.52), bekerja sendiri (OR 4.65, 95% CI 2.01-10.72), bekas perokok (OR 5.17, 95% CI 1.42-18.75), aktiviti fizikal berat (OR 1.26, 95% CI 1.13-1.52), pra-obes (OR 5.35, 95% CI 2.03-14.05), obes (OR 2.28 95% CI 1.18-4.36) (berbanding kurang berat badan) dan memiliki insurans kesihatan (OR 2.72, 95% CI 1.33-5.52), adalah faktor yang mempengaruhi kecenderungan lelaki memilih pakej pencegahan/promosi untuk wanita. Hasil keseluruhan kajian ini menunjukkan kepentingan faktor sosio-demografi, risiko kesihatan dan pemilikan insurans kesihatan responden dalam kecenderungan mereka memilih pakej pencegahan/promosi untuk wanita.

Kata kunci: Insurans kesihatan; perkhidmatan kesihatan; perkhidmatan kesihatan wanita; perkhidmatan pencegahan

INTRODUCTION

Globally, women are primarily affected by chronic illnesses such as heart disease, hypertension, diabetes mellitus, various gynecological complications, and cancer, and the scenario is similar in Malaysia (Chua & Cheah 2012). Access to preventive/promotive care is crucial to preserving women's wellbeing over their lifespan because women's health has a direct effect on the health of the future generation (Fitzgerald et al. 2014).

Women tend to utilize healthcare services more compared to men due to their complex healthcare needs, primarily due to reproductive issues and related complications. While their average income is comparatively lower than men, their health expenditure is higher given higher healthcare needs, contributing to financial difficulties in accessing healthcare. Areas covered by women's health insurance are also impacted by the fact that they are more likely to have a transition in the workplace, such as maternity leave (Fitzgerald et al. 2014). Despite this, there is still a lack of a gender-based approach to providing preventive/promotive healthcare services, especially in health insurance.

Therefore, to avoid increased healthcare costs concerning women's financial benefit and protection and access to better health outcomes, the healthcare financing system should move towards universal health coverage (Bump 2010; Fan & Savedoff 2014; World Health Organization 2010). The system that relies heavily on general taxation for financing is unsustainable, especially if it has an inefficient tax collection system (Shafie & Hassali 2013). In Malaysia, the healthcare delivery system was established since 1957 and was provided by the public and private sectors, as well as non-governmental organizations (Chua & Cheah 2012; Kananatu 2002).

Thus, Malaysia's current tax-based financing system could significantly affect the evolving pattern of disease to ensure the successful management of chronic diseases at the population level. Consequently, social health insurance would offer affordable coverage to the population by reducing the inequity and disparities between males and females in obtaining healthcare (Ibrahimipour et al. 2011).

Many studies were conducted to determine the needs of the population and the priorities of health services, which help policymakers recognize and address the utmost needs. Studies on need are important to address

the types of health services needed and preferred by individuals. In contrast, demand is what people ask for, which is linked to socio-economic characteristics. Thus, understanding the population's needs and demands helps policymakers to identify unmet needs. Subsequently, this information may have the greatest value as well as important in designing a program or develop benefit packages that accommodate individual needs (Tatnall-Arias 2012; Teerawattananon & Tangcharoensathien 2004). Policymakers will reflect on the needs of their respective societies, their values, beliefs, hopes and ways of dealing with adversity (Epstein et al. 2010).

The gender-based approach in providing preventive or promotive healthcare services still lacks, especially in health insurance. Good knowledge of the perceptions of women's insurance packages and the lack of understanding among men about what women need contributes to gender inequity in the use of healthcare services. The benefits package that women used most and were interested in can be identified. Men's perception of what women need is crucial, as the amount of premium that they are paying depends on the household income, and this is especially true if men are the family breadwinner. Therefore, this paper aims to determine male and female preferences for preventive or promotive services benefit packages for women, followed by the identification of various socio-demographic factors that contribute to the selection of the preferred preventive or promotive benefit packages for women.

MATERIALS AND METHODS

The cross-sectional study was conducted from December 2016 to December 2017 in the states of Perak and Selangor, which included five and four districts, respectively, from Perak and Selangor. The sampling method was conducted using multistage random sampling. A total of 18 health clinics were randomly selected using the random number table, where two health clinics were chosen from each district. A total of 638 respondents aged 18 to 60 years were randomly selected for interviews throughout the data collection period by selecting each third name from the list of patients who attended the clinics on the day for a visit or follow-up. Data were collected from self-administered questionnaires by a single interviewer who was adequately trained. The questionnaire covered a wide range of demographic characteristics, including

age, education level, place of residence, marital status, household income, and occupation. Health risks (smoking, alcohol, body mass index, and physical activity) were determined, and the subscription regarding individual health insurance scheme was asked. The primary outcome variable was the preference of preventive/promotive benefit packages for women as measured by a set of questionnaires.

STUDY TOOLS

The questions were developed by three family medicine specialists and one obstetrician and gynecologist. The standard and important services on preventive/promotive benefit packages practiced in the healthcare setting were mapped out, and the services were listed. The questionnaire was validated, and a bilingual translator certified that the translation was accurate and correct, having reviewed both versions (English and Malay) of the questionnaire. The respondents were asked to choose a score of a four-point Likert scale in the questionnaire based on their preferences of the benefit packages. The four-point Likert scale included 'Not preferred (1), Least preferred (2), Preferred (3), and Most preferred (4)'. Only four points were given on the Likert scale because it was considered necessary that the respondents chose the answers in one direction. There was no neutral answer category to prevent ambiguity and to guide the respondents to select a definitive choice that fairly reflected their views. This approach was emphasized to the respondents.

USAGE AND DEFINITION OF VARIABLES

Socio-demographic: Age was classified into two: Less than 40 years and 40 years and above. This age group was chosen as the previous literature found that the concern for health and service utilization among women started after 40 years of age due to advanced age and higher risks of chronic diseases (Ogawa et al. 2009). Ethnicity was classified into two groups, i.e. Malay and non-Malay, while marital status was classified into two groups, i.e. married and divorced/separated/widowed. Similarly, education was classified into two groups, i.e. lower and higher education. The lower education referred to primary and secondary education, while the higher education referred to diploma or certificate, degree, and postgraduate (Masters/Ph.D.) studies. Employment was classified into four groups, i.e. government sector, private sector, and self-employed, and not working. Lastly, household income was classified into three, i.e. based on *Penyiasatan Pendapatan dan Perbelanjaan Isi Rumah (PPPIR)* in 2014, where the household income is categorized as top 10% (>RM 8319), middle 40% (RM 3860-RM 8319), and below 40% (<RM 3860; 1=T20, 2=M40, 3=B20).

Health-related variables: Presence of chronic illness, i.e. diabetes mellitus, hypertension, asthma, and heart disease (listed in the questionnaire); Level of physical activity (1 = Heavy, e.g., heavy lifting, digging, aerobics, or fast cycling, 2 = Moderate, e.g. lifting light loads, mopping

the floor, cycling at average speed, or playing badminton, 3 = Low, e.g. walking at least 10 min at a time, at work or home, and sitting or lying down); Smoking status (1 = active smoker, 2 = ex-smoker, 3 = never smoked); Alcohol intake (1 = no, 2 = yes); Body mass index (BMI), where the variables were categorized as underweight (less than 18.5 kg m⁻²), normal (18.5-22.9 kg m⁻²), pre-obese (23-27.4 kg m⁻²), and obese (more than 27.5 kg m⁻²). The weight and height were self-reported by the respondents, and the BMI was based on Malaysia's national guideline for the management of obesity (Ministry of Health Malaysia 2003).

Presence of any health insurance scheme: *yes, or no*. Preferred preventive/promotive benefit packages: The first and second points on the Likert scale were considered negative preferences, while the third and fourth points were considered as positive preferences. Therefore, the score of <45 was characterized as not preferred, whereas the score of ≥45 was selected as preferred.

STATISTICAL ANALYSIS

Data screening and data exploration were done with normality tests for continuous data distribution using the Kolmogorov-Smirnov test. The socio-demographic characteristics and benefit packages preferences for women were compared using Pearson's Chi-square test and student t-test. The logistic regression model was used to derive the predictors of benefit packages preferences for women. Simple coding was used to code the independent variables as each level of the variable is compared to the reference level. Bivariate and multivariate analyses were carried out at a 95% significance level using SPSS Version 21.0. In the bivariate analyses, binary logistic regression was used to assess the variables associated with preventive/promotive benefit packages preferences for women. Multivariate analysis was then carried out to determine if the variables that had been proven significant in the bivariate test were still significant after being monitored by multiple simultaneous variables simultaneously with $p < 0.05$, which would be included in the stepwise model. This was done separately for male and female respondents. The area under the curve (AUC) was used to assess the model's goodness-of-fit. The area under the curve was 0.804 and 0.836 for females and males, respectively. All data analyses were performed using Statistical Package for Social Sciences version 21.0 (SPSS 21.0).

RESULTS

SOCIO-DEMOGRAPHIC CHARACTERISTIC

The descriptive statistic in Table 1 shows that 93.9% of the respondents are married, and 6.1% are divorced/widowed or separated, with the highest proportion of the respondents being 40 years old and above (50.2%). For ethnicity, Malay is the majority, comprising of 51.6% of the respondents. Most of the respondents are government employees (34.2%), and the majority of

respondents received secondary school education (48.4%). Approximately 51.7% of respondents earned monthly household income below 40% (B40). Meanwhile, the risk factors account for 30.9% active smokers and 9.1% alcohol drinkers. Among the respondents, 45.8% are in the pre-obese group, and the main physical activity among the respondents is walking for 20 min (37.0%), whereas 62.7% of the respondents have no chronic illness. Only 29.6% of the respondents had health insurance schemes with a higher portion of females (61.9%) compared to males (38.1%).

FREQUENCY AND DISTRIBUTION OF PREVENTIVE/ PROMOTIVE SERVICES PREFERENCES FOR WOMEN ACCORDING TO GENDER

The not preferred and preferred options were based on the Likert score, with not preferred allocated as Likert 1 and 2, and preferred as Likert 3 and 4. Table 2 shows the frequency and percentage distribution of preferred preventive/promotive benefit packages among men and women. In this study, the cancer-screening test is most preferred (82.6%) by women respondents but secondly preferred by men. Male respondents chose vaccination as their number one preference for preferred preventive/promotive service relative to females (Table 2).

FACTOR ASSOCIATED WITH PREFERRED PREVENTIVE/ PROMOTIVE BENEFIT PACKAGES ACCORDING TO GENDER

The findings in this study showed that women significantly preferred preventive/promotive benefit packages more than men (66.7 and 58.7%, respectively; Table 3). When we compare men's and women's socio-demographic factors and health risk and health insurance status, concerning preventive/promotive benefit packages for women (as in Table 4), the findings showed that 69.5% of the men aged less than 40 years old preferred preventive/promotive benefit packages for women compared to 50.8% among the older men ($p=0.031$). Approximately 68.5% of Malay men preferred preventive/promotive benefit packages for women compared to 46.7% non-Malay men ($p<0.001$). For women respondents, 75.8% of Malay women preferred preventive/promotive benefit packages for themselves compared to 58.1% non-Malay women ($p=0.001$).

A majority (66.7%) of the men with higher education level preferred preventive/promotive benefit packages for women as compared to 51.8% men with lower education ($p=0.010$). In terms of occupation, 80.0% of not-working/pensioner men preferred preventive/promotive benefit packages for women compared to other occupations ($p<0.001$). For household income factor, 85.7% of male respondents from the T20 income group preferred preventive/promotive benefit packages for women as compared to M40 (66.2%) and B40 (49.3%; $p=0.001$).

Meanwhile, for the women respondents, 75.5% women from the M40 group preferred preventive/promotive benefit packages for women compared to the

T20 (50.0%) and B40 (60.8%; $p=0.004$) groups (Table 4). Regarding men's risk factors (Table 4), 79.1% of ex-smokers among men are reported to be associated with preventive/promotive benefit packages as compared to active smokers (57.4%) and non-smokers (50.0%; $p<0.001$). Similarly, a higher percentage of men (64.8%) who never consumed alcohol preferred preventive/promotive benefit packages for women compared to 28.8% of men who are alcohol drinkers ($p<0.001$). Men with moderate physical activity (80.8%) constitute the highest group that preferred preventive/promotive benefit packages for women compared to heavy physical activity (41.8%) and low physical activity (63.6%; $p<0.001$). For the BMI variable, men having normal BMI (69.6%) preferred preventive benefit packages for women compared to underweight (56.3%), pre-obese (68.3%), and obese (45.0%) men ($p=0.001$). Male respondents with no history of chronic illness also significantly preferred preventive/promotive benefit packages for women compared to those with chronic illness ($p<0.001$).

On the contrary, 85.1% of obese women preferred preventive/promotive benefit packages for women compared to underweight (35.0%), normal (70.1%), and pre-obese (61.5%) female respondents ($p<0.001$) in the risk factor variable (Table 4). In terms of subscription to a health insurance scheme, both men and women respondents having health insurance significantly preferred preventive/promotive benefit packages for women compared to those without health insurance subscription (Table 4).

FACTOR INFLUENCING PREVENTIVE/PROMOTIVE BENEFIT PACKAGES PREFERENCES FOR WOMEN ACCORDING TO GENDER

The factors influencing preventive/promotive benefit packages preferences for women are shown in Table 5. Men aged less than 40 years old had 3.56 times higher odds of preferring preventive/promotive benefit packages for women compared to the older age group (95% CI 1.82-6.95, $p<0.001$). The Malay women group had 2.42 times higher odds of preferring preventive/promotive benefit packages compared to the non-Malay women group (95% CI 1.37-4.24, $p=0.002$). In terms of educational background, men with higher education had 3.40 times higher odds of preferring preventive/promotive benefit packages for women as compared to lower educational background (95% CI 1.77-6.52, $p<0.001$).

Self-employed men had 4.65 times higher odds of preferring preventive/promotive benefit packages compared to other occupations (95% CI 2.01-10.72, $p<0.001$). In terms of women's occupation, both self-employed and not working/pensioner categories are statistically significant in having higher preferences of preventive/promotive benefit packages for themselves compared to government employees (Table 5).

As for the risk factors (Table 5), men who are ex-smokers have 5.17 times higher odds of preferring

preventive/promotive benefit packages for women compared to non-smoking men (95% CI 1.42-18.75, $p=0.012$). Men who practiced heavy physical activity have 26% higher odds (OR=1.26, 95% CI 1.13-1.52, $p<0.001$) of preferring preventive/promotive benefit packages for women compared to low physical activity. For the women's BMI, the highest odds were for the obese group, which have 16.24 times higher odds of preferring preventive/promotive benefit packages (95% CI 4.50-58.62, $p<0.001$). Women having no chronic illness had 3.72 times higher odds of preferring preventive/promotive

benefit packages for themselves compared to women having an existing chronic illness.

In terms of subscription to health insurance (Table 5), women who owned health insurance have 4.21 times higher odds of preferring preventive/promotive benefit packages compared to men who do not have any health insurance scheme (95%CI 2.19-8.04, $p=0.006$). Meanwhile, men who owned health insurance have 2.72 times higher odds of preferring preventive/promotive benefit packages for women compared to men who do not have any health insurance scheme (95% CI 1.33-5.52, $p=0.006$).

TABLE 1. Socio-demographic characteristic and health risk of the respondents

Characteristic		Men (n=305) n (%)	Women (n=333) n (%)	Total (n=638) n (%)
Age (years) 40.71 (± 10.625) ^b				
Age Group	<40 years old	128 (42.0)	190 (67.1)	318 (49.8)
	>40 years old	177 (58.0)	143 (42.9)	320 (50.2)
Marital status	Married	280 (91.8)	319 (95.8)	599 (93.9)
	Divorce/widowed/separated	25 (8.2)	14 (4.2)	39 (6.1)
Ethnic	Malay	168 (55.1)	161 (48.3)	329 (51.6)
	Non-Malay	137 (44.9)	172 (51.7)	309 (48.4)
Location	Urban	256 (83.9)	261 (78.4)	517 (81.0)
	Rural	49 (16.1)	72 (21.6)	121 (19.0)
Education	Lower education	164 (53.8)	197 (59.2)	361 (56.6)
	Higher education	141 (46.2)	136 (40.8)	277 (43.3)
Occupation	Government	115 (37.7)	101 (30.3)	218 (34.2)
	Private sector	110 (36.1)	57 (17.1)	167 (26.2)
	Self-employed	75 (24.6)	55 (16.5)	130 (20.4)
	Not working/pensioner	5 (1.6)	118 (35.4)	123 (19.3)
Income	T20	7 (2.3)	8 (2.4)	15 (2.4)
	M40	154 (50.5)	139 (41.7)	293 (45.9)
	B40	144 (47.2)	186 (55.9)	330 (51.7)
Alcohol intake	No	253 (83.0)	327 (98.2)	580 (90.9)
	Yes	52 (17.0)	6 (1.8)	58 (9.1)
Smoking Status	Yes	188 (61.6)	9 (2.7)	197 (30.9)
	Stop smoke	43 (14.1)	2 (0.6)	45 (7.1)
	Never smoke	74 (24.3)	322 (96.7)	396 (62.1)
BMI	Underweight	16 (5.2)	20 (6.0)	36 (5.6)
	Normal	46 (15.1)	77 (23.1)	123 (19.3)
	Pre-obese	123 (40.3)	169 (50.8)	292 (45.8)
	Obese	120 (39.3)	67 (20.1)	187 (29.3)

Physical activity	Heavy	110 (36.1)	46 (13.8)	156 (24.5)
	Moderate	52 (17.0)	155 (46.5)	207 (32.4)
	Low	143 (46.9)	132 (39.6)	275 (43.1)
Chronic illness	Yes	134 (43.9)	104 (31.2)	238 (37.3)
	No	171 (56.1)	229 (68.8)	400 (62.7)

a = Number (percentage), b = Mean (standard deviation), BMI = Body Mass Index, T20 (Income >RM8319), M40 (Income RM3860-RM8319), B40 (Income <RM3860)

TABLE 2. Frequency and percentage distribution of preferred preventive/promotive benefit packages for women among gender group (n=638)

Item	Preventive/promotive benefit packages for women	Preferred	
		Men (n=305) n (%)	Women (n=333) n (%)
P1	Basic laboratory investigation such as cholesterol profile and blood sugar	177 (58.0)	222 (66.7)
P2	Other laboratory investigation such as renal profile, liver profile, blood profile, hormone, and urine test	190 (62.3)	252 (75.7)
P3	Radiological investigation such as x-rays, CT scan, or MRI	211 (69.2)	265 (79.6)
P4	Cancer screening tests including mammograms, cancer specific blood test, pap smear and stool test	219 (71.8)	275 (82.6)
P5	Minor surgical procedures such as colonoscopy, gastro scope, or tissue biopsy	218 (71.5)	256 (76.9)
P6	Infectious disease screening such as TB, HIV, hepatitis, and syphilis	210 (68.9)	264 (79.3)
P7	Cardiovascular screening including blood pressure examination, cholesterol blood test and electrocardiography (ECG)	200 (65.6)	269 (80.8)
P8	Diabetes screening	196 (64.3)	254 (76.3)
P9	Family planning	199 (65.2)	229 (68.8)
P10	Pre-conception counseling	200 (65.6)	249 (74.8)
P11	Mental health counseling	201 (65.9)	229 (68.8)
P12	Vaccination	227 (74.4)	241 (72.4)
P13	Dietary counseling	199 (65.2)	215 (64.9)
P14	Exercise prescription	203 (66.6)	217 (65.2)
P15	Health promotion and education through smartphone apps	200 (65.6)	218 (65.5)

TABLE 3. Relationship of socio-demographic variable and preventive/promotive benefit packages with gender

Gender	Preventive/promotive benefit packages			
	Preferred	Not preferred	χ^2	p value
Men	179 (58.7)	126 (41.3)	4.340	0.037*
Women	222 (66.7)	111 (33.3)		

*= Significant at $p < 0.05$, χ^2 – chi square test

TABLE 4. Socio-demographic, health risk and health insurance status, in relation to preventive/promotive benefit packages for women

Variables	Women (n=333)			Men (n=305)		
	Not preferred (%)	Preferred (%)	χ^2 (p value)	Not preferred (%)	Preferred (%)	χ^2 (p value)
Age years (continuous)	37.91(±11.158)	39.87(±9.822)	1.611	43.40 (±9.898)	42.12(±10.114)	
Mean (SD)	(0.108)			0.974 (0.331)		
Age group						
< 40 years	66 (34.7)	124 (65.3)	0.392 (0.559)	39 (30.5)	89 (69.5)	10.695 (0.001)*
> 40 years	45 (31.5)	98 (68.5)		87 (49.2)	90 (50.8)	
Ethnic						
Malay	39 (24.2)	122 (75.8)	11.640 (0.001)*	53 (31.5)	115 (68.5)	14.706
Non-Malay	72 (41.9)	100 (58.1)		73 (53.3)	64 (46.7)	(<0.001)*
Location						
Urban	84 (32.2)	177 (67.8)	0.718 (0.400)	110 (43.0)	146 (57.0)	1.805 (0.207)
Rural	27 (37.5)	45 (62.5)		16 (32.7)	33 (67.3)	
Education						
Lower	66 (33.5)	131 (66.5)	0.006 (0.937)	79 (48.2)	85 (51.8)	6.884 (0.010)*
Higher	45 (33.1)	91 (66.9)		47 (33.3)	94 (66.7)	
Marital Status						
Married	109 (34.2)	210 (65.8)	2.386 (0.154) ^a	118 (42.1)	162 (57.9)	0.974 (0.399)
Divorced/Separated/widow	2 (14.3)	12 (85.7)		8 (32.0)	17 (68.0)	
Occupation						
Government	41 (39.8)	62 (60.2)	5.696 (0.127)	40 (34.8)	75 (65.2)	29.654 (<0.001)
Private	22 (38.6)	35 (61.4)		67 (60.9)	43 (39.1)	^a *
Self-employed	13 (23.6)	42 (76.4)		18 (24.0)	57 (76.0)	
Not working/pensioner	35 (29.7)	83 (70.3)		1 (20.0)	4 (80.0)	
Household income						
B40	73 (39.2)	113 (60.8)	8.852 (0.012)*	73 (50.7)	71 (49.3)	10.954 (0.004) ^a *
M40	34 (24.5)	105 (75.5)		52 (33.8)	102 (66.2)	
T20	4 (50.0)	4 (50.0)		1 (14.3)	6 (85.7)	
Smoking						
Active-smoker	0 (0.0)	9 (100.0)	5.688 (0.058) ^a	80 (42.6)	108 (57.4)	9.791 (0.007)*
Ex-smoker	0 (0.0)	2 (100.0)		9 (20.9)	34 (79.1)	
Non-smoker	111 (34.5)	211 (65.5)		37 (50.0)	37 (50.0)	
Never	109 (33.3)	218 (66.7)	0.0	89 (35.2)	164 (64.8)	23.026
Yes	2 (33.3)	4 (66.7)	(1.000)	37 (71.2)	15 (28.8)	(<0.001)*
Physical activity						
Heavy	16 (34.8)	30 (65.2)	1.221 (0.543)	64 (58.2)	46 (41.8)	24.814
Moderate	47 (30.3)	108 (69.7)		10 (19.2)	42 (80.8)	(<0.001)*
Low	48 (36.4)	84 (63.6)		52 (36.4)	91 (63.6)	
BMI						
Underweight	13 (65.0)	7 (35.0)	21.657 (<0.001)*	7 (43.8)	9 (56.3)	16.237 (0.001)*
Normal	23 (29.9)	54 (70.1)		14 (30.4)	32 (69.6)	
Pre-obese	65 (38.5)	104 (61.5)		39 (31.7)	84 (68.3)	
Obese	10 (14.9)	57 (85.1)		66 (55.0)	54 (45.0)	
Chronic illness						
Yes	55 (52.9)	49 (47.1)	26.014	75 (56.0)	59 (44.0)	21.182
No	56 (24.5)	173 (75.5)	(<0.001)*	51 (29.8)	120 (70.2)	(<0.001)*
Own health insurance						
Yes	16 (13.7)	101 (86.3)	31.367	20 (27.8)	52 (72.2)	7.120 (0.009)*
No	95 (44.0)	121 (56.0)	(<0.001)*	106 (45.5)	127 (54.5)	

 χ^2 – chi square test, ^a = Fisher's Exact test * = Significant at p<0.05, T20 (Income >RM8319), M40 (Income RM3860-RM8319), B40 (Income <RM3860)

TABLE 5. Summary of multivariate analysis with significant variables associated preventive/promotive benefit packages for women

Variables	Men (n=305)		Women (n=333)	
	OR (95% CI for OR)	<i>p</i> value	OR (95% CI for OR)	<i>p</i> value
Age				
> 40 years	[1]			
< 40 years	3.56 (1.82-6.95)	<0.001*	-	-
Ethnicity				
Non-Malay	[1]			
Malay	-	-	2.42 (1.37-4.24)	0.002*
Education				
Lower	[1]			
Higher	3.40 (1.77-6.52)	<0.001*	-	-
Occupation				
Government	[1]			
Private	0.59 (0.29-1.15)	0.121	1.28 (0.59-2.73)	0.523
Self-employed	4.65 (2.01-10.72)	<0.001*	6.24 (2.41-16.10)	<0.001*
Not working/pensioner	4.49 (0.36-55.52)	0.242	2.71 (1.35-5.40)	0.005*
Smoking				
Non-smoker	[1]			
Active-smoker	1.68 (0.79-3.53)	0.172	-	-
Ex-smoker	5.17 (1.42-18.75)	0.012*	-	-
Physical activity				
Low	[1]			
Heavy	1.26 (1.13-1.52)	<0.001*	-	-
Moderate	1.23 (0.49-3.07)	0.656	-	-
BMI				
Obese	[1]			
Underweight	0.25 (0.05-1.11)	0.069	5.99 (1.76-20.33)	0.004*
Normal	5.35 (2.03-14.05)	0.001*	5.11 (1.69-15.38)	<0.001*
Pre-obese	2.28 (1.18-4.36)	0.013*	16.24 (4.50-58.62)	<0.001*
Chronic illness				
Yes	[1]			
No	-		3.72 (2.01-6.88)	<0.001*
Own health insurance				
No	[1]			
Yes	2.72 (1.33-5.52)	0.006*	4.21 (2.19-8.04)	<0.001*

MEN

*Backward LR multiple logistic regression analysis was applied

[] = reference, OR= odds ratio, CI = confidence interval

No multicollinearity or influential outliers of the dataset. *= Significant at $p < 0.05$, Nagelkerke $R = 0.408$, Hosmer-Leeshow test ($p < 0.001$) and area under the ROC curve (83.6%) were applied to check the model fitness

WOMEN

*Backward LR multiple logistic regression analysis was applied

[] = reference, OR= odds ratio, CI = confidence interval

No multicollinearity or influential outliers of the dataset. *= Significant at $p < 0.05$, Nagelkerke $R = 0.344$, Hosmer-Leeshow test ($p = 0.003$) and area under the ROC curve (80.4%) were applied to check the model fitness

DISCUSSION

PREFERRED PREVENTIVE/PROMOTIVE SERVICES FOR WOMEN

The findings in our study showed that vaccination is the top preventive/promotive services preferred by men, while women preferred the cancer-screening test. Both vaccination and cancer-screening test are similar to the 'most prioritized effective preventive services' list in the US, whereas the prioritized preventive services in Malaysia are yet to be studied (Maciosek et al. 2006).

Vaccination programs are essential as they protect infants, children, adolescents, and women from infectious diseases and cancer. Men are aware of the importance of vaccination from the day they become fathers (Mahapatro 2012). Previous research in Ghana examined the potential outcomes if the information on the importance of child immunization is aimed at both parents (Rajkotia & Frick 2012). As a result, participation in child immunization has increased as men have taken greater responsibility for their children. The findings of this study indicated that men prefer vaccination programs for the women in their family, which signifies their responsibilities to protect women against vaccine-preventable diseases.

A study conducted in the US called Women's Health Initiative Observational Study found that women with a usual care provider or health insurance subscribed to a cancer-screening test (Hsia et al. 2000). Furthermore, individuals with long-term care insurance are more likely to engage in preventive health behaviors such as immunizations and cancer screening (Hsia et al. 2000), which is quite similar to the male respondents' preference in the current study.

SOCIO-DEMOGRAPHIC, HEALTH RISK, AND HEALTH INSURANCES RELATED TO PREVENTIVE/PROMOTIVE BENEFIT PACKAGES PREFERENCES FOR WOMEN

Based on this finding, there is a significant link between preventive/promotive benefits packages for women with gender, where women preferred preventive/promotive benefit packages than men. A study done by Murasko (2006) showed that gender differences in preventive/promotive services preference are not significantly prominent. However, our study showed that women preferred preventive/promotive benefit packages, even though a study showed that Malaysians rarely engage in screening or preventive services as they generally seek healthcare when they experience symptoms or when they are ill (Atun et al. 2016).

The most plausible explanation for women's preferences for preventive-promotive packages is the establishment of women empowerment principles in most countries in the world, including Malaysia. The introduction of gender-based strategies and initiatives to address women's health needs has better equipped them to gain awareness, improve access to essential services, and develop personal skills to improve their health (Mahapatro

2012; Ostlin et al. 2006). Such empowerment initiatives have strengthened women's ability to decide on healthcare. They can utilize healthcare services, especially preventive/promotive services such as breast cancer screening and diabetic screening, as a result of valid health promotion and policy awareness by the government. A previous study on maternal health services in Africa highlighted the fact that women's level of education empowers them not only in terms of awareness of the availability and benefits of health services but also in terms of their autonomy to make informed decisions about their health (Esmailnasab et al. 2014; Kalule-Sabiti et al. 2014; Krishnaswamy et al. 2009). Many researchers have indicated that women's empowerment is the most influential factor in their participation in maternal health services relative to education and economic status (Ahmed et al. 2010; Kawaguchi et al. 2014).

The results showed that men under the age of 40 preferred preventive/promotive benefit packages for their women compared to older men. Women are at a higher risk of heart disease, osteoporosis, and other health problems as their age increases, particularly during their postmenopausal years. Therefore, men in the younger age group (less than 40 years old) in our study opted for preventive/promotive benefit packages for their women, suggesting that they are mindful of health risks with higher premium insurance at a later period. These findings contradict a study performed in the US, where women respondents over 40 years of age favored insurance coverage for screening services and preventive services more, in addition to medical visits and prescription medications. According to the report, given that women over 55 years of age face chronic diseases such as diabetes or hypertension, the provision of preventive services was higher, particularly in the cancer screening test (Hsia et al. 2000; Xu et al. 2006).

Our study determined that ethnicity has a significant relationship with preventive/promotive benefit packages for women, with Malay women preferring preventive/promotive benefit packages for women compared to non-Malay women. This may be attributed to Malays utilizing public health facilities more than non-Malays, most likely due to the higher proportion of Malays in Malaysia (Krishnaswamy et al. 2009).

This study also showed that there is a significant link between educational background and preventive/promotive benefit packages for women among the male respondents. Men with a higher level of education preferred preventive/promotive benefit packages than those with lower education level. Higher education background indicates the knowledge and awareness on healthcare of an individual. A study on the utilization of maternal healthcare services done in Ethiopia noted that women with higher education level are more likely to engage contraceptive methods (Kalule-Sabiti et al. 2014). Meanwhile, a study reported that due to the lack of knowledge about the appropriate cancer screening,

poor socio-economic background, as well as stigma, and negative cultural beliefs, preventive/promotive services are categorized among the least utilized healthcare services (Dahlui et al. 2011).

Both male and female respondents who are self-employed preferred preventive/promotive benefit packages compared to government and private employees. Self-employed individuals typically do not have an official health insurance policy such as the Social Security Organization (SOCO) or government Guarantee Letter (GL) as a health cost protection. Therefore, they prefer to select all available or assumed health services required when they are provided, including preventive/promotive services. Moreover, self-employed individuals also do not have a fixed income.

Regarding health risk status, our study showed that male ex-smokers preferred preventive/promotive benefit packages. This may be due to individuals who have quit smoking and mindful of the risks of smoking and preferred to change to healthy lifestyles and develop preventive behaviors. Individuals who smoke usually fail to obtain regular health screening; hence, putting them at risk of developing chronic diseases (Hsia et al. 2000).

The absence of chronic illnesses was found to be significantly associated with preventive/promotive benefit packages for both men and women. Respondents who have no chronic illness preferred preventive/promotive benefit packages for women compared to those who have chronic illnesses. Healthy people are usually more educated and motivated to keep their good health. The existence of medical problems, in addition to increasing age, may lead to the rejection of an individual's enrolment in health insurance or higher premium imposed on them (Dong et al. 2004; Xu et al. 2006). Concurrently, the findings showed that younger respondents with no chronic illness preferred preventive/promotive benefit packages. Previous studies done in developed countries highlighted that younger women with no chronic disease preferred preventive/promotive benefit packages, particularly cancer screening tests (Esmailnasab et al. 2014; Hsia et al. 2000). This scenario is observed due to the success of cancer awareness and health promotion in the countries. Individuals with chronic diseases usually do not use preventive/promotive services, as they would utilize curative services more.

This study also found a significant association between health insurance scheme subscription by both male and female respondents and preventive/promotive benefit packages preferences. Individuals who have health insurance usually have good socio-economic-demographic profiles. Furthermore, they are more aware and knowledgeable about the health services provided by their insurance company. There is also evidence that individuals who engage in preventive health behaviors are more likely to have a health insurance scheme (Buchmueller et al. 2013).

The connection between marital status and preventive/promotive benefit packages in this study was not significant, similar to a study done by McDonald (2013).

However, another study showed inconsistent results with the current study, where it indicated that married women are more likely to utilize healthcare services (Esmailnasab et al. 2014; McDonald 2013).

The locality is not a significant finding in our study, as there is a proper referral program to urban tertiary centers for those in rural areas. In addition, the coverage of Malaysia's healthcare services included the development of 1Malaysia Clinic (currently known as the Community Clinic) and also the implementation of the 1Malaysia Family Care program, an initiative under the Malaysia National Blue Ocean Strategy. The initiative focuses on holistic healthcare and social services for the elderly, disabled, and single mothers. However, a study conducted in China found that different localities with distinctive economic status had different use of healthcare facilities due to time and travel costs (Wang et al. 2012; Xiao et al. 2010).

As the level of income increases, the demand for goods and services will also increase due to higher purchasing power among those with higher incomes. In Uganda, modern contraceptive use is positively associated with the level of household wealth (Kalule-Sabiti et al. 2014). Economic studies have shown that women are more sensitive to health insurance and costs in healthcare utilization compared to men. However, the present study found that preventive/promotive benefit packages preferences are not associated with household income.

CONCLUSION

Better information on the expectations of benefit packages among women and the men's perceptions of what women need are important to achieve equity in healthcare. Therefore, the overall results of this study imply the importance of socio-demographic factors, health risk, and subscription of health insurance among respondents towards preferences for women's health services. However, this study has several limitations. The study was conducted among the Malaysian population who attended public health clinics. Therefore, the main limitation is that the respondents came there with a symptom or medical illness to seek medical treatment. This can give rise to prejudice, namely on which of the services they preferred. However, the attendees of public health facilities represent the community in the respective area. Variation in the socio-economic background can be seen compared to attendees of private health facilities who are usually from the higher-income group or with personal private health insurance.

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